

# Constant-Dollar Manufacturing Inventories

**I**N the comprehensive revision of the national income and product accounts (NIPA's) published in December 1980, major improvements were made in the methodology for estimating nonfarm inventories.<sup>1</sup> This article presents quarterly estimates for 1959-81 of constant-dollar manufacturing inventories by stage of fabrication, which were made possible by the improved methodology, and describes the new methodology for manufacturing industries. Chart 1 shows constant-dollar total manufacturing inventories and inventories by the three stages of fabrication—materials and supplies, work-in-process, and finished goods. Table 1 shows the constant-dollar estimates for selected industries by stage of fabrication.

An understanding of inventory behavior is, of course, essential to the understanding of business cycles. Manufacturing inventories are the largest category of inventories—accounting for more than 40 percent of the total. Stage-of-fabrication estimates that are integrated definitionally and statistically with the NIPA estimates can be expected to deepen understanding of this large category of inventories and thus of the business cycle.

The new stage-of-fabrication estimates will appear in the SURVEY OF CURRENT BUSINESS each February, May, August, and November as part of the presentation of "Quarterly and Monthly Constant-Dollar Manufactur-

ing and Trade Inventories and Sales." (Monthly estimates of constant-dollar manufacturing and trade inventories and sales also appear in the S-pages of the SURVEY.) Inventory estimates that include manufacturing but without stage-of-fabrication breakdowns appear in the National Income and Product Accounts Tables, tables 5.8 and 5.9 (change in business inventories) and 5.10, 5.11, and 7.21 (stocks).

## Methodology for Constant-Dollar Manufacturing Inventories

Business inventories are goods awaiting or undergoing processing, or on hand for sale. The stock is usually measured as of the end of a period, and may be valued in several ways. The constant-dollar stock can be viewed as the physical stock of inventories valued in prices of a base year (at present, 1972). Because information about inventories comes from the accounting records of business, which do not include records of physical stocks, an indirect estimating procedure must be used to obtain constant-dollar stocks. This procedure converts the value of inventories reported by business, referred to as book value, to base-year prices. The procedure has four steps:

- (1) Separation of last-in, first-out (LIFO) and non-LIFO book values,
- (2) Construction of current-period inventory acquisition cost indexes,
- (3) Construction of inventory cost indexes,
- (4) Deflation of non-LIFO and LIFO book values.

In what follows, the book value data will be described and each of the four steps explained.

## Book value data

Data on the book value of inventories, total and by stage of fabrication, are from the Census Bureau. Year-end book values are from the quinquennial *Census of Manufactures* and the *Annual Survey of Manufactures (ASM)*. End-of-month book values are from *Manufacturers' Shipments, Inventories, and Orders* (Series M3-1.10).

The ability of firms to report book values by stage of fabrication reflects the fact that they maintain three separate inventory accounts. Between the time they purchase goods and the time their processing of them begins, the goods are held in a materials and supplies (hereafter, materials) inventory account. Between the time processing begins and the time it ends, the goods are held in a work-in-process account. Between the time processing is completed and the goods are sold, goods are held in a finished goods account.

## Step One: Separation of LIFO and non-LIFO book values

Under generally accepted accounting principles, firms may use any one of several different inventory valuation methods, which are based largely on different assumptions about the sequence in which goods are used up, i.e., withdrawn from inventories, or, consequently, about which goods remain in the inventory stock. Book values are separated by BEA into two groups, LIFO and all other, because different methods of converting book values to constant dollars must be used. (At the end of 1980, approximately 25 percent of manufacturing book values were based on the LIFO method.)

The LIFO method is based on the assumption that goods acquired most re-

<sup>1</sup> These improvements were summarized in "National Income and Product Accounts of the United States: An Introduction to the Revised Estimates for 1929-80," SURVEY OF CURRENT BUSINESS 60 (December 1980): 9-10.

NOTE.—Teresa L. Weadock and John Mon provided assistance in the preparation of the estimates contained in this article.

cently are used up first. Accordingly, the largest portion of a firm's LIFO book-value stock is its "base" stock, i.e. the value of its inventories at the time it was started or adopted LIFO. A firm's base stock remains intact as long as inventories are not drawn down below that level. A firm's addition to book value in an accounting period is the excess of its purchases over its withdrawals. Because the LIFO book-value stocks are comprised of base stocks and subsequent additions, or layers, it is necessary to construct deflators for each layer of the LIFO stock, starting with the base stock. The procedure will be described in step two.

Non-LIFO methods are generally based on the assumption that all goods in inventory are turned over or replaced, i.e., that there is no base stock. Non-LIFO book-value stocks reflect only recent acquisition costs, so that it is feasible to construct deflators for the non-LIFO stocks. This procedure will be described in step three.

Yearend data on the extent of the use of the different inventory valuation methods, from the *ASM*'s and the December M3 surveys, provide the information for separating inventories into LIFO and non-LIFO. These surveys do not provide LIFO percentages for each stage of fabrication. BEA assumes that the LIFO method is used to a larger extent in the valuation of materials inventories than in the valuation of work-in-process and finished goods inventories. This assumption is made because the more homogeneous nature of materials makes it easier for firms to use LIFO.

#### *Step Two: Construction of current-period inventory acquisition cost indexes*

In order to construct indexes needed to deflate non-LIFO book-value stocks, information is needed about: (a) the composition of the goods held in inventory; (b) prices of the goods held in inventory; and (c) the age composition of the goods held in inventory. This section describes the construction of current-period inventory acquisition cost indexes ( $C_t$ ), which combine the information on inventory composition and prices.

To estimate constant-dollar inventories, it is necessary to replicate the cost structure of each of the three kinds of inventory accounts. Costs included in inventory accounts can be classified into one of three types: materials, labor, and overhead. Overhead costs include purchases such as workers' clothing, lubricating oils, small hand tools, employee compensation paid to supervisors and other nonproduction personnel working at the plant, depreciation charges, property taxes, utilities, insurance, rent, and repair and maintenance services. Non-production costs, such as selling expenses and central office salaries, are treated as expenses of the period in which they are incurred and are not included in inventories.

Components of the Producer Price Index (PPI) of the Bureau of Labor Statistics are appropriate for the materials component of inventories. How-

ever, for work-in-process inventories, PPI coverage is limited to a few overhead items; for finished goods inventories, PPI's are inappropriate because the PPI's for finished goods include profits and some costs that are not included in the inventory accounts. Accordingly, BEA uses indexes from the PPI for deflating materials inventories but uses a different approach for work-in-process and finished goods inventories. In this approach, described below, BEA estimates labor and overhead indexes and combines these indexes with the indexes for materials to estimate the indexes for work-in-process and finished goods inventories.

There is no survey information on the composition of goods in inventories. BEA assumes that the composition is the same as that of purchases of goods and services. Relative proportions with-

(Text continued on page 23)

CHART 1

#### Manufacturing Inventories

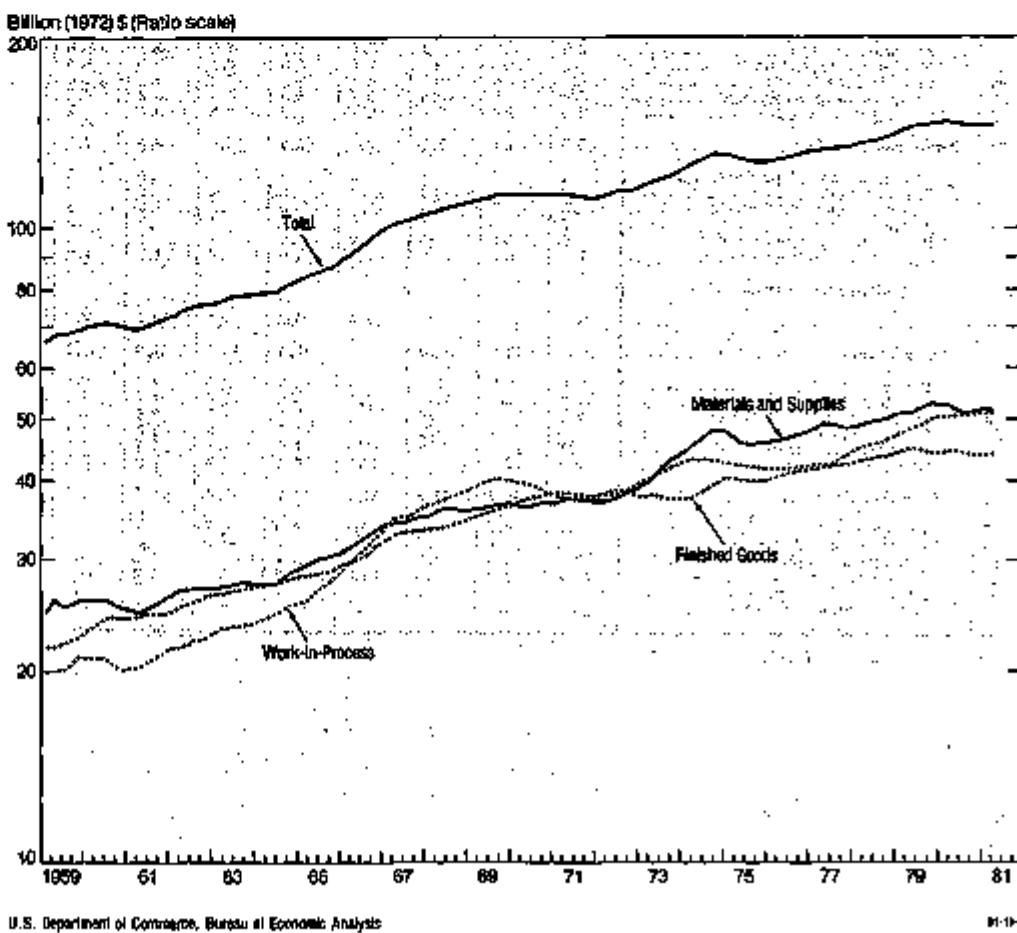


Table 1.—Manufacturing Inventories in

Line		1969				1970				1971				1972			
		I	II	III	IV												
1	Total	66.5	67.9	67.9	69.1	70.2	70.7	71.1	69.9	69.4	69.7	70.5	71.7	73.2	74.3	75.3	75.6
2	Durable goods	41.7	42.6	42.6	43.4	43.4	43.5	43.6	43.5	42.6	42.6	43.1	44.1	45.3	45.9	46.4	46.6
3	Primary metals	7.9	7.6	7.3	7.6	7.9	8.2	8.3	8.1	8.2	8.3	8.3	8.6	8.7	8.7	8.7	8.6
4	Fabricated metals	6.3	6.6	6.3	6.2	6.8	6.8	6.5	6.8	6.0	6.0	6.2	6.5	6.5	6.5	6.5	6.4
5	Machinery, except electrical	7.7	8.0	8.2	8.4	8.6	8.5	8.4	8.2	8.1	8.1	8.2	8.5	8.7	8.9	9.1	9.1
6	Electrical machinery	2.7	2.9	4.0	4.1	4.4	4.4	4.4	4.4	4.8	4.8	4.4	4.7	5.0	5.2	5.4	5.6
7	Transportation equipment	8.6	9.0	8.9	8.1	9.1	9.7	9.6	9.0	7.9	8.0	8.3	8.5	8.5	8.5	8.5	8.3
8	Other durable goods <sup>1</sup>	7.5	7.7	7.7	7.8	8.1	8.2	8.3	8.1	8.1	8.0	8.1	8.2	8.2	8.3	8.3	8.3
9	Nondurable goods	24.3	25.1	25.4	25.8	25.8	26.3	26.6	26.3	26.8	27.2	27.4	27.5	27.9	28.4	28.8	28.6
10	Food and kindred products	7.2	7.3	7.3	7.2	7.1	7.1	7.4	7.2	7.6	7.7	7.8	7.8	7.8	8.0	8.2	8.2
11	Paper and allied products	1.9	1.9	1.8	1.9	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.2	2.2	2.2
12	Chemicals and allied products	3.2	3.2	3.3	3.5	3.5	3.6	3.6	3.5	3.6	3.7	3.7	3.8	3.8	4.0	4.1	4.1
13	Petroleum and coal products	2.3	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.5	2.4	2.4	2.5	2.5
14	Rubber and plastic products	1.1	1.1	1.2	1.2	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.4	1.4	1.4	1.4	1.4
15	Other nondurable goods <sup>2</sup>	9.1	9.2	9.2	9.5	9.7	9.8	10.0	9.9	10.1	10.2	10.3	10.4	10.5	10.6	10.6	10.6
	Materials and supplies inventories																
16	Total	24.6	26.4	26.8	25.7	26.0	26.8	26.8	26.4	26.1	24.7	25.2	25.8	26.5	26.9	27.0	27.0
17	Durable goods	14.1	15.2	14.6	14.7	14.8	14.7	14.8	14.8	13.8	13.3	13.8	14.2	14.7	15.0	15.0	15.0
18	Primary metals	2.2	2.3	2.3	2.3	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
19	Fabricated metals	2.8	2.0	2.0	2.7	2.9	2.7	2.7	2.6	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3
20	Machinery, except electrical	2.1	2.2	2.2	2.3	2.3	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
21	Electrical machinery	1.1	1.2	1.2	1.3	1.3	1.3	1.3	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
22	Transportation equipment	2.3	2.6	2.3	2.4	2.4	2.4	2.4	2.2	2.0	2.0	2.2	2.2	2.3	2.3	2.3	2.3
23	Other durable goods <sup>1</sup>	2.8	2.7	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.7	2.8	2.8	2.8	2.8	2.8	2.8
24	Nondurable goods	10.4	10.3	10.9	11.1	11.3	11.3	11.1	11.1	11.3	11.6	11.6	11.8	11.9	12.0	12.0	12.0
25	Food and kindred products	2.5	2.6	2.6	2.6	2.6	2.7	2.7	2.7	2.7	2.8	2.8	2.8	2.9	2.9	2.9	2.9
26	Paper and allied products	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.2	1.2	1.2
27	Chemicals and allied products	1.2	1.2	1.2	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.4	1.4	1.4	1.4
28	Petroleum and coal products	.5	.6	.6	.6	.6	.6	.6	.6	.6	.6	.6	.6	.6	.6	.6	.6
29	Rubber and plastic products	.3	.4	.4	.3	.4	.4	.4	.3	.3	.3	.3	.3	.4	.4	.4	.4
30	Other nondurable goods <sup>2</sup>	4.0	5.1	6.1	5.2	5.2	5.2	5.3	5.3	5.3	5.3	5.3	5.3	5.6	5.6	5.6	5.6
	Work-in-process inventories																
31	Total	20.0	20.1	20.4	20.9	21.0	21.0	20.9	20.1	20.2	20.5	20.7	21.2	21.3	21.4	21.4	21.4
32	Durable goods	16.6	16.7	16.9	17.3	17.5	17.4	17.3	16.8	16.7	16.9	17.0	17.4	18.0	18.1	18.1	18.1
33	Primary metals	2.4	2.2	2.1	2.4	2.4	2.4	2.4	2.3	2.3	2.5	2.6	2.6	2.6	2.6	2.6	2.6
34	Fabricated metals	2.0	2.0	1.9	1.9	1.9	2.0	2.1	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
35	Machinery, except electrical	3.2	3.2	3.2	3.5	3.5	3.5	3.5	3.4	3.4	3.5	3.5	3.5	3.5	3.5	3.5	3.5
36	Electrical machinery	1.5	1.6	1.7	1.7	1.6	1.8	1.8	1.6	1.6	1.8	1.9	2.1	2.1	2.1	2.1	2.1
37	Transportation equipment	4.6	4.5	5.8	5.7	5.6	5.3	5.3	5.0	4.9	4.8	5.0	5.2	5.2	5.2	5.2	5.2
38	Other durable goods <sup>1</sup>	2.0	2.0	2.1	2.1	2.2	2.3	2.3	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1
39	Nondurable goods	3.5	3.4	3.5	3.6	3.5	3.6	3.6	3.5	3.5	3.7	3.7	3.7	3.8	3.8	3.8	3.8
40	Food and kindred products	.4	.4	.5	.5	.5	.5	.5	.5	.5	.5	.5	.5	.5	.5	.5	.5
41	Paper and allied products	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2
42	Chemicals and allied products	.5	.5	.5	.5	.5	.5	.5	.5	.5	.5	.5	.5	.5	.5	.5	.5
43	Petroleum and coal products	.5	.5	.5	.5	.5	.5	.5	.5	.5	.5	.5	.5	.5	.5	.5	.5
44	Rubber and plastic products	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2
45	Other nondurable goods <sup>2</sup>	1.6	1.6	1.6	1.6	1.6	1.6	1.7	1.6	1.6	1.7	1.7	1.7	1.8	1.8	1.8	1.8
	Finished goods inventories																
46	Total	21.8	21.8	22.2	22.5	22.2	22.7	22.1	24.2	24.2	24.5	24.6	24.6	25.4	25.9	26.3	26.3
47	Durable goods	11.1	11.0	11.1	11.4	11.1	12.4	12.6	12.5	12.1	12.2	12.3	12.4	12.6	12.8	13.1	13.1
48	Primary metals	2.6	2.0	1.9	2.0	2.8	2.5	2.6	2.5	2.2	2.4	2.5	2.6	2.6	2.6	2.6	2.6
49	Fabricated metals	1.5	1.6	1.4	1.6	1.6	1.8	1.7	1.7	1.6	1.6	1.7	1.7	1.7	1.7	1.7	1.7
50	Machinery, except electrical	2.4	2.5	2.4	2.6	2.7	2.7	2.6	2.7	2.7	2.6	2.6	2.7	2.7	2.8	2.8	2.8
51	Electrical machinery	1.1	1.1	1.2	1.2	1.2	1.2	1.3	1.3	1.3	1.3	1.3	1.4	1.4	1.4	1.4	1.4
52	Transportation equipment	.9	.9	.9	1.0	1.0	1.1	1.1	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
53	Other durable goods <sup>1</sup>	2.9	2.9	2.9	3.1	3.2	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
54	Nondurable goods	10.6	10.6	11.0	11.2	11.4	11.7	11.7	12.0	12.2	12.2	12.2	12.2	12.3	12.6	12.9	13.1
55	Food and kindred products	4.2	4.2	4.3	4.1	4.0	3.9	4.1	4.2	4.4	4.4	4.5	4.5	4.7	4.8	4.7	4.7
56	Paper and allied products	.6	.6	.6	.6	.6	.6	.6	.7	.6	.7	.7	.7	.7	.7	.7	.7
57	Chemicals and allied products	1.5	1.5	1.6	1.7	1.7	1.8	1.8	1.8	1.8	1.8	1.9	1.9	1.9	2.0	2.1	2.1
58	Petroleum and coal products	1.2	1.2	1.2	1.3	1.3	1.3	1.3	1.3	1.3	1.4	1.4	1.4	1.4	1.4	1.4	1.4
59	Rubber and plastic products	.6	.6	.6	.7	.7	.7	.7	.7	.8	.8	.8	.8	.8	.8	.8	.8
60	Other nondurable goods <sup>2</sup>	2.6	2.6	2.6	2.7	2.8	2.9	2.9	3.1	3.0	3.0	3.1	3.0	3.1	3.1	3.1	3.1

See footnotes at end of table.

## Constant Dollars, Seasonally Adjusted, End of Period

1963				1964				1965				1966				1967				Line		
I	II	III	IV	I	II	III	IV															
76.4	77.2	77.9	78.3	78.4	78.3	78.6	78.6	83.0	82.1	84.2	85.7	87.0	88.0	91.5	94.3	97.3	100.0	101.5	102.4	104.1	1	
47.3	48.0	48.3	48.8	48.6	49.3	49.8	51.4	52.4	53.0	54.0	55.7	57.2	58.0	61.6	63.3	65.2	67.0	67.6	69.1	70.1	2	
8.6	8.8	8.6	8.6	8.7	8.7	8.8	8.8	8.7	8.6	8.8	8.0	8.3	9.5	9.7	10.0	10.1	10.5	10.6	10.5	10.5	3	
8.5	8.6	8.6	8.6	8.7	8.7	8.8	8.8	8.9	8.8	8.9	8.2	8.2	8.6	8.7	8.8	8.9	9.0	9.1	9.1	9.1	4	
9.2	9.3	9.2	9.4	9.5	9.5	9.8	10.0	10.5	10.7	11.0	11.4	11.7	11.8	12.2	12.7	12.9	13.6	13.8	13.8	13.9	5	
6.6	6.7	6.7	6.7	6.8	6.8	6.8	6.8	6.9	6.8	6.8	7.0	7.3	7.3	8.3	8.7	8.9	9.0	9.1	9.2	9.2	6	
5.8	5.9	5.9	5.9	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	7	
3.4	3.5	3.5	3.5	3.6	3.6	3.7	3.7	3.8	3.8	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	8	
29.2	29.3	29.3	29.3	29.3	29.4	29.6	29.6	30.7	30.6	30.8	31.3	31.8	32.4	32.7	32.8	34.3	34.5	34.3	35.1	35.1	9	
8.1	8.0	8.4	8.6	8.7	8.5	8.5	8.7	8.6	8.4	8.2	8.2	8.5	8.7	8.7	8.9	9.1	9.2	9.4	9.4	9.4	10	
2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	11	
4.0	4.1	4.1	4.2	4.3	4.3	4.4	4.4	4.5	4.5	4.6	4.7	4.9	5.1	5.3	5.5	5.5	5.6	5.7	5.7	5.7	12	
2.5	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	13	
1.4	1.5	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	14	
10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	11.0	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1	15	
27.2	27.3	27.6	27.5	27.5	27.4	27.7	28.6	29.2	29.7	30.1	30.2	30.2	30.2	30.2	30.2	30.2	30.2	30.2	30.2	30.2	16	
15.0	16.2	16.4	16.3	16.3	16.3	16.3	16.3	16.3	16.3	17.1	17.7	17.8	18.8	18.4	18.5	18.2	18.4	18.5	18.5	18.5	17	
3.4	3.2	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.4	3.4	3.4	3.5	3.6	3.6	3.7	3.9	3.9	4.0	3.9	3.9	18	
2.6	2.7	2.6	2.7	2.7	2.8	2.8	2.8	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	19	
2.8	2.4	2.4	2.4	2.4	2.4	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	20	
1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	21	
2.6	2.7	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	22	
2.8	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	23	
12.2	12.1	12.2	12.3	12.2	12.1	12.1	12.3	12.2	12.3	12.3	12.3	12.3	12.3	12.3	12.3	12.3	12.3	12.3	12.3	12.3	24	
3.0	2.9	3.0	2.1	3.0	2.9	3.0	3.1	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	25	
1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	26	
1.4	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	27	
1.5	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	28	
5.7	5.6	5.6	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	29	
22.6	22.5	22.5	22.6	22.6	22.4	22.4	22.4	22.4	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	30	
18.4	19.4	19.4	19.5	19.5	19.8	19.8	20.1	20.5	21.1	21.4	21.4	21.9	22.7	23.3	24.2	25.1	26.1	27.5	28.6	29.7	30.8	31
2.6	2.6	2.6	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	32	
2.2	2.1	2.2	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	33	
4.0	4.0	4.1	4.3	4.3	4.1	4.6	4.9	5.1	5.2	5.2	5.5	5.7	5.9	6.2	6.3	6.4	6.4	6.4	6.4	6.4	34	
2.7	2.7	2.7	2.7	2.6	2.7	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	35	
5.3	5.7	5.8	5.7	5.9	5.9	5.9	5.9	6.1	6.1	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	36	
2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	37	
4.1	4.1	4.1	4.1	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	38	
.6	.6	.6	.6	.6	.6	.6	.6	.6	.6	.6	.6	.6	.6	.6	.6	.6	.6	.6	.6	.6	40	
.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	41	
.6	.6	.6	.6	.6	.6	.6	.6	.6	.6	.6	.6	.6	.6	.6	.6	.6	.6	.6	.6	.6	42	
.6	.6	.6	.6	.6	.6	.6	.6	.6	.6	.6	.6	.6	.6	.6	.6	.6	.6	.6	.6	.6	43	
.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	44	
.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	45	
26.2	26.5	26.5	27.0	27.1	27.4	27.5	28.0	28.3	28.3	28.5	28.5	28.8	29.4	29.5	29.5	29.5	29.5	29.5	29.5	29.5	46	
13.3	13.4	13.5	13.5	13.7	13.7	14.0	14.2	14.2	14.3	14.5	14.5	14.6	14.6	14.6	14.7	14.7	14.7	14.7	14.7	14.7	47	
2.6	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	48	
1.3	1.7	1.7	1.7	1.8	1.8	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	49	
2.9	2.9	2.9	2.9	2.9	2.9	3.0	3.1	3.1	3.1	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	50	
1.5	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	51	
1.0	1.0	1.1	1.1	1.1	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	52	
3.5	3.6	3.5	3.5	3.6	3.6	3.7	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.9	4.0	4.1	4.1	4.2	4.2	53	
12.9	13.1	13.3	13.5	13.8	13.7	14.0	14.1	14.0	14.0	14.3	14.3	14.3	14.5	14.7	14.9	15.2	15.4	15.7	15.9	16.1	54	
4.6	4.6	4.8	4.9	5.1	5.1	5.0	5.1	5.0	5.0	4.8	4.8	4.8	4.9	4.9	5.0	4.9	5.1	5.3	5.5	5.5	55	
.7	.8	.8	.8	.8	.8	.8	.8	.8	.8	.8	.8	.8	.8	.8	.8	.8	.8	.8	.8	.8	56	
2.0	2.0	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	57	
1.4	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	58	
.8	.8	.8	.8	.8	.8																	

Table 1.—Manufacturing Inventories in Constant

Line		1963				1969				1970				1971			
		I	II	III	IV												
1	Manufacturing	104.6	106.1	107.4	108.4	109.8	111.0	112.2	112.8	112.8	113.1	113.2	112.9	112.9	113.0	113.1	113.4
2	Durable goods	55.4	58.3	59.9	57.5	72.7	73.8	74.4	75.1	75.0	74.8	74.9	74.6	74.6	74.5	73.3	72.6
3	Primary metals	10.4	10.3	10.2	10.3	10.2	10.3	10.4	10.4	10.4	10.6	10.8	11.0	11.3	11.6	10.9	10.9
4	Fabricated metals	9.2	9.6	9.6	9.5	9.7	9.7	9.8	9.8	9.5	9.2	9.4	9.5	9.3	9.7	9.6	9.2
5	Machinery, except electrical	12.8	13.9	14.0	14.1	14.6	14.8	15.2	15.5	15.8	15.9	16.1	16.2	16.1	15.6	15.8	15.1
6	Electrical machinery	9.3	9.4	9.5	9.5	9.8	10.0	10.1	10.1	10.1	10.1	10.2	10.2	10.2	9.9	9.7	9.7
7	Transportation equipment	16.4	17.6	17.2	17.1	17.4	17.5	17.9	17.6	17.6	17.6	17.7	17.7	17.2	14.8	14.7	14.7
8	Other durable goods <sup>1</sup>	10.3	10.2	10.3	10.7	11.0	11.4	11.7	11.8	11.8	12.0	12.3	12.2	12.1	12.4	12.3	12.4
9	Nondurable goods	35.2	35.8	36.5	36.3	37.1	37.1	37.8	37.7	37.8	38.3	38.1	38.3	38.5	38.3	38.2	38.2
10	Food and kindred products	9.4	9.6	9.8	9.8	9.6	9.8	10.0	9.7	9.9	9.9	9.7	9.8	9.8	9.8	10.0	10.1
11	Paper and allied products	2.7	2.8	2.8	2.8	2.7	2.7	2.8	2.8	2.9	2.9	2.9	2.9	3.0	3.0	3.1	3.1
12	Chemicals and allied products	5.7	5.7	5.8	5.8	6.0	6.0	6.4	6.5	6.6	6.8	6.8	6.9	6.8	7.0	7.1	7.1
13	Petroleum and coal products	2.8	2.8	2.9	2.8	2.8	2.7	2.7	2.8	2.9	2.9	2.9	2.8	2.8	2.9	2.9	2.9
14	Rubber and plastic products	1.9	2.0	2.0	2.1	2.1	2.2	2.2	2.3	2.4	2.3	2.4	2.4	2.4	2.5	2.5	2.5
15	Other nondurable goods <sup>2</sup>	12.8	13.0	13.1	13.3	13.4	13.6	13.6	13.7	13.4	13.3	13.6	13.5	13.5	13.5	13.5	13.5
	Materials and supplies inventories																
16	Manufacturing	34.9	35.7	36.1	36.2	36.3	36.5	36.6	36.8	36.9	36.7	36.4	36.9	36.6	37.1	37.1	37.1
17	Durable goods	21.2	21.8	21.9	21.7	21.4	21.7	21.9	22.4	22.4	22.9	22.2	22.3	22.2	22.6	22.3	22.3
18	Primary metals	3.6	3.9	3.9	3.9	3.9	3.8	3.8	3.8	3.9	3.9	4.0	4.0	4.0	4.1	4.1	4.1
19	Fabricated metals	5.3	4.1	4.1	4.1	4.0	3.8	3.8	3.8	3.9	3.9	3.7	3.6	3.7	3.9	3.7	3.7
20	Machinery, except electrical	3.5	2.7	2.7	2.7	2.6	2.7	2.7	2.8	2.9	2.9	2.7	2.7	2.7	2.7	2.7	2.7
21	Electrical machinery	2.6	2.7	2.7	2.6	2.7	2.7	2.8	2.9	2.9	2.9	2.7	2.7	2.7	2.7	2.7	2.7
22	Transportation equipment	3.9	4.0	4.0	3.7	3.8	3.7	3.6	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
23	Other durable goods <sup>1</sup>	3.5	3.3	3.5	3.6	3.8	3.9	4.0	4.1	4.1	4.1	4.2	4.2	4.3	4.4	4.4	4.4
24	Nondurable goods	13.8	14.0	14.1	14.2	14.2	14.4	14.5	14.4	14.4	14.5	14.3	14.5	14.4	14.5	14.5	14.5
25	Food and kindred products	3.2	3.2	3.4	3.3	3.2	3.2	3.2	3.2	3.2	3.1	3.1	3.2	3.1	3.2	3.2	3.2
26	Paper and allied products	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.5	1.6	1.6	1.6	1.6	1.6	1.6	1.6
27	Chemicals and allied products	2.0	2.1	2.1	2.2	2.2	2.3	2.3	2.3	2.3	2.3	2.3	2.4	2.4	2.4	2.4	2.4
28	Petroleum and coal products	.6	.6	.6	.7	.7	.6	.6	.7	.7	.7	.7	.7	.7	.7	.7	.7
29	Rubber and plastic products	.6	.6	.6	.7	.7	.7	.7	.7	.7	.7	.7	.7	.7	.7	.7	.7
30	Other nondurable goods <sup>2</sup>	6.1	6.0	6.0	6.1	6.1	6.1	6.0	6.0	6.0	5.9	5.9	5.9	5.9	5.9	5.9	5.9
	Work-in-process inventories																
31	Manufacturing	36.4	37.0	37.3	38.0	38.9	39.3	40.0	40.1	39.7	39.5	39.2	39.3	37.9	37.8	37.2	37.8
32	Durable goods	21.2	21.7	21.9	22.5	22.3	22.7	24.3	24.4	24.1	23.9	23.5	22.6	22.7	21.5	21.2	21.5
33	Primary metals	3.4	3.3	3.4	3.4	3.4	3.5	3.5	3.5	3.4	3.4	3.5	3.7	3.8	3.7	3.6	3.6
34	Fabricated metals	2.1	2.2	2.2	2.3	2.4	2.4	2.4	2.4	2.3	2.4	2.4	2.3	2.2	2.2	2.2	2.2
35	Machinery, except electrical	6.4	6.3	6.2	6.5	6.7	6.8	7.0	7.1	7.2	7.2	7.2	6.8	6.8	6.7	6.7	6.7
36	Electrical machinery	4.5	4.6	4.6	4.7	4.6	4.9	5.0	4.9	4.8	4.8	4.8	4.7	4.6	4.5	4.5	4.5
37	Transportation equipment	10.9	11.5	11.6	11.7	12.0	12.1	12.2	12.1	12.2	12.2	12.2	12.3	12.3	10.2	9.9	9.7
38	Other durable goods <sup>1</sup>	2.8	2.8	2.8	2.9	2.9	2.9	3.1	3.1	3.1	3.2	3.3	3.2	3.2	3.2	3.2	3.2
39	Nondurable goods	5.2	5.3	5.4	5.5	5.6	5.6	5.7	5.7	5.5	5.6	5.7	5.8	5.8	5.8	5.8	5.8
40	Food and kindred products	.7	.7	.7	.7	.7	.7	.8	.7	.8	.8	.8	.8	.8	.8	.8	.8
41	Paper and allied products	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3
42	Chemicals and allied products	.8	.9	.9	.8	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.1	1.0	1.1	1.1
43	Petroleum and coal products	.6	.6	.6	.6	.6	.6	.6	.6	.6	.6	.6	.6	.6	.6	.6	.6
44	Rubber and plastic products	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2
45	Other nondurable goods <sup>2</sup>	2.5	2.5	2.5	2.6	2.7	2.7	2.7	2.7	2.6	2.7	2.7	2.7	2.8	2.8	2.8	2.8
	Finished goods inventories																
46	Manufacturing	33.3	33.4	33.9	34.4	34.8	35.4	35.8	35.9	35.4	37.2	37.6	37.8	38.3	39.0	37.8	37.7
47	Durable goods	17.0	16.9	17.1	17.3	17.5	18.2	18.3	18.3	18.5	18.6	18.4	18.8	20.9	20.5	19.5	19.4
48	Primary metals	1.2	3.0	2.9	3.4	2.8	3.0	3.1	3.1	2.1	3.2	2.2	2.3	1.6	3.4	2.2	3.2
49	Fabricated metals	2.2	2.8	2.9	2.4	2.2	2.5	2.3	2.4	2.3	2.3	2.3	2.4	2.4	2.4	2.3	2.3
50	Machinery, except electrical	3.9	3.9	4.0	3.9	4.0	4.2	4.2	4.2	4.3	4.5	4.6	4.6	4.6	4.6	4.6	4.6
51	Electrical machinery	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.4	2.4	2.5	2.6	2.6	2.6	2.6	2.6	2.6
52	Transportation equipment	1.5	1.5	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.6	1.6	1.6	1.6	1.6
53	Other durable goods <sup>1</sup>	4.0	4.0	4.0	4.2	4.2	4.4	4.4	4.5	4.5	4.7	4.8	4.9	4.9	4.9	4.9	4.9
54	Nondurable goods	16.3	16.5	16.9	17.1	17.2	17.8	17.5	17.6	17.8	18.2	18.2	18.0	18.3	18.4	18.3	18.3
55	Food and kindred products	5.5	5.6	5.8	5.8	5.7	5.8	5.9	5.8	5.9	5.9	5.8	5.7	5.8	6.0	5.9	5.9
56	Paper and allied products	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.1	1.1	1.1	1.1	1.2	1.2	1.2	1.2
57	Chemicals and allied products	2.9	2.9	2.9	3.0	2.9	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
58	Petroleum and coal products	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
59	Rubber and plastic products	1.0	1.0	1.1	1.1	1.1	1.2	1.2	1.2	1.2	1.3	1.3	1.3	1.3	1.3	1.3	1.3
60	Other nondurable goods <sup>2</sup>	4.4	4.5	4.5	4.6	4.7	4.7	4.7	4.7	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8

See footnotes at end of table.

Dollars, Seasonally Adjusted, End of Period—Continued

Table I.—Manufacturing Inventories in Constant Dollars, Seasonally Adjusted, End of Period—Continued

Line		1978				1979				1980				1981		
		I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III
1	Manufacturing.....	135.2	136.9	136.2	135.1	140.4	142.9	145.0	145.9	147.3	147.2	145.9	145.8	146.1	146.3	147.6
2	Durable goods.....	39.1	36.4	31.3	32.7	34.8	36.6	37.5	35.9	36.5	36.5	36.6	36.2	36.5	36.6	36.8
3	Primary metals.....	11.1	12.2	13.1	12.4	12.2	12.4	12.3	12.3	12.3	12.4	12.1	12.0	12.6	12.6	14.0
4	Fabricated metals.....	11.6	11.8	11.8	11.3	12.0	12.2	12.1	12.3	12.2	12.0	11.7	11.9	11.7	11.6	11.6
5	Machinery, except electrical.....	21.1	21.5	21.9	22.3	24.0	23.5	24.1	24.4	24.6	24.9	24.0	24.2	24.8	24.8	24.8
6	Electrical machinery.....	13.0	13.3	13.8	13.6	14.1	14.2	14.4	14.6	15.2	15.0	15.0	14.9	15.1	15.2	15.4
7	Transportation equipment.....	14.9	15.2	15.5	15.7	16.3	16.8	17.1	17.5	17.7	18.0	18.6	18.4	18.8	17.9	17.0
8	Other durable goods <sup>1</sup> .....	16.5	16.6	16.8	16.6	16.4	16.6	16.5	16.6	16.6	16.5	16.4	16.5	16.5	16.2	17.0
9	Nondurable goods.....	46.3	46.6	46.5	46.4	46.9	47.2	47.5	47.0	47.8	47.7	46.8	46.1	46.6	46.8	46.9
10	Food and kindred products.....	11.6	11.6	11.6	11.7	12.0	12.4	12.5	12.6	12.8	12.3	12.3	12.0	11.9	12.0	12.0
11	Paper and allied products.....	3.8	3.9	3.9	3.9	4.0	4.0	4.1	4.2	4.2	4.2	4.2	4.2	4.3	4.4	4.4
12	Chemicals and allied products.....	8.7	8.8	8.8	8.6	8.8	8.8	8.7	8.7	9.1	9.8	9.6	9.6	9.0	9.0	9.0
13	Petroleum and coal products.....	2.3	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
14	Rubber and plastic products.....	2.4	2.5	2.5	2.5	2.6	2.6	2.4	2.2	2.2	2.2	2.1	2.0	2.1	2.1	2.1
15	Other nondurable goods <sup>2</sup> .....	15.1	15.3	15.5	15.2	15.8	15.6	15.5	15.0	15.4	15.2	15.1	15.1	15.1	15.2	15.2
	Materials and supplies inventories															
16	Manufacturing.....	48.4	48.9	49.4	48.7	50.7	50.9	51.5	52.3	52.6	52.2	50.9	51.0	51.5	51.3	51.5
17	Durable goods.....	29.7	30.3	30.9	31.1	31.8	32.0	32.4	33.1	33.1	33.7	33.6	32.1	32.3	32.2	32.5
18	Primary metals.....	5.2	5.3	5.3	5.3	5.3	5.2	5.3	5.4	5.5	5.7	5.5	5.7	5.5	5.6	5.6
19	Fabricated metals.....	4.9	4.9	4.9	4.9	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	4.6	4.7	4.7
20	Machinery, except electrical.....	8.0	8.3	8.3	8.4	8.6	8.7	8.6	7.2	7.3	7.3	7.1	7.0	7.1	7.1	7.1
21	Electrical machinery.....	2.9	4.1	4.2	4.2	4.4	4.4	4.5	4.5	4.7	4.6	4.5	4.6	4.6	4.6	4.6
22	Transportation equipment.....	6.1	6.2	6.5	6.4	6.7	6.5	6.6	6.7	6.6	6.6	6.5	6.5	6.2	6.2	6.1
23	Other durable goods <sup>1</sup> .....	5.7	5.7	5.8	5.9	5.9	5.1	6.3	6.2	6.2	6.2	6.1	6.0	6.2	6.2	6.3
24	Nondurable goods.....	18.7	19.3	19.5	19.4	19.9	19.9	20.4	19.2	19.5	19.5	19.5	19.8	19.3	19.3	19.1
25	Food and kindred products.....	4.2	4.2	4.0	4.0	4.1	4.1	4.1	4.5	4.4	4.4	4.2	4.2	4.2	4.1	4.1
26	Paper and allied products.....	2.0	2.0	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
27	Chemicals and allied products.....	2.2	2.3	2.3	2.3	2.4	2.4	2.3	2.3	2.5	2.4	2.3	2.3	2.4	2.4	2.4
28	Petroleum and coal products.....	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
29	Rubber and plastic products.....	1.2	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.2	1.2	1.2	1.2	1.2
30	Other nondurable goods <sup>2</sup> .....	7.2	7.1	7.0	7.1	7.1	7.0	7.0	7.1	7.2	7.2	7.1	7.1	7.1	7.1	7.1
	Work-in-process inventories															
31	Manufacturing.....	44.4	45.8	45.4	45.1	45.9	48.2	48.6	48.6	50.3	50.4	50.5	50.4	51.0	50.9	51.0
32	Durable goods.....	27.4	27.6	28.0	28.6	28.2	28.7	31.3	32.2	32.8	31.1	31.4	31.3	31.5	31.6	31.6
33	Primary metals.....	4.5	4.6	4.7	4.8	4.7	4.8	4.8	4.7	4.5	4.7	4.5	4.6	4.7	4.8	4.8
34	Fabricated metals.....	4.2	4.1	4.1	4.1	4.2	4.2	4.1	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
35	Machinery, except electrical.....	9.4	9.6	9.8	10.0	10.2	10.5	10.8	11.0	11.1	11.1	11.0	11.7	10.7	10.6	10.6
36	Electrical machinery.....	5.0	5.2	5.0	5.1	5.4	5.3	5.7	5.7	7.2	7.1	7.2	7.5	7.5	7.5	7.5
37	Transportation equipment.....	8.8	9.0	9.0	9.2	9.3	9.8	10.1	10.5	11.0	11.4	11.9	12.0	12.0	11.7	11.7
38	Other durable goods <sup>1</sup> .....	4.2	4.3	4.3	4.4	4.6	4.6	4.5	4.5	4.6	4.6	4.5	4.6	4.7	4.7	4.7
39	Nondurable goods.....	7.4	7.4	7.5	7.6	7.6	7.6	7.6	7.3	7.5	7.3	7.2	7.1	7.1	7.1	7.0
40	Food and kindred products.....	1.1	1.1	1.2	1.2	1.2	1.2	1.2	1.2	1.4	1.2	1.2	1.2	1.2	1.2	1.2
41	Paper and allied products.....	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.5	1.5	1.5	1.5	1.5	1.5	1.5
42	Chemicals and allied products.....	1.3	1.3	1.4	1.4	1.4	1.4	1.4	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
43	Petroleum and coal products.....	1.5	1.7	1.7	1.7	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
44	Rubber and plastic products.....	1.5	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
45	Other nondurable goods <sup>2</sup> .....	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0
	Finished goods inventories															
46	Manufacturing.....	42.7	43.0	43.4	43.3	44.3	45.0	44.7	44.1	44.3	44.5	44.3	43.5	43.7	44.1	44.0
47	Durable goods.....	22.6	22.6	22.8	23.0	23.7	22.9	23.8	23.6	23.6	23.6	23.6	23.5	23.4	23.6	23.3
48	Primary metals.....	3.3	3.4	3.3	3.2	3.2	3.3	3.2	3.2	3.2	3.1	3.0	3.0	3.1	3.1	3.3
49	Fabricated metals.....	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.7	2.7	2.7
50	Machinery, except electrical.....	3.7	3.8	3.8	3.9	3.1	3.6	3.4	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
51	Electrical machinery.....	3.2	3.3	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
52	Transportation equipment.....	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
53	Other durable goods <sup>1</sup> .....	6.0	5.6	5.7	5.7	5.9	5.9	5.9	5.4	5.4	5.7	5.7	5.7	5.7	5.8	5.8
54	Nondurable goods.....	20.2	20.4	20.6	20.3	20.5	20.8	20.5	20.5	20.8	20.9	20.7	20.9	20.7	20.5	20.7
55	Food and kindred products.....	8.2	8.2	8.4	8.4	8.7	7.8	7.5	6.9	6.7	6.8	6.9	6.6	6.7	6.8	6.8
56	Paper and allied products.....	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
57	Chemicals and allied products.....	4.2	6.2	6.2	6.1	6.0	6.0	6.1	6.2	6.2	6.2	6.2	6.2	6.1	6.2	6.2
58	Petroleum and coal products.....	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.5	1.4	1.5	1.5	1.5	1.5	1.5	1.5
59	Rubber and plastic products.....	1.6	1.7	1.7	1.7	1.7	1.6	1.6	1.7	1.5	1.5	1.5	1.5	1.5	1.5	1.5
60	Other nondurable goods <sup>2</sup> .....	8.0	8.2	8.3	8.1	8.4	8.4	8.4	8.2	8.2	8.2	8.2	8.1	8.1	8.1	8.1

1. Includes lumber and wood products; furniture and fixtures; stone, clay, and glass products; instruments and related products; and miscellaneous manufacturing industries.

2. Includes tobacco manufactures; textile mill products; apparel products; printing and publishing; and leather and leather products.

(Text continued from page 27)

in each industry are derived from the latest BEA Input-Output (I-O) tables, and are used to combine appropriate price indexes to obtain the  $C_s$  indexes.

Monthly book value data by stage of fabrication are available only for major industry groups (2-digit Standard Industrial Classification level). However, the  $C_s$  indexes are estimated at a finer level of detail (subindustries) within many of these major groups, and then weighted together. Homogeneity with respect to age composition and LIFO percentages is the criterion for selecting subindustries. Use of this criterion yields 50 subindustries within the 20 major groups.

In the construction of  $C_s$  indexes for labor and overhead, BEA uses various indexes from the Consumer Price Index and PPI, and unit labor cost indexes. Identical indexes are constructed for each subindustry within a major group, because information to calculate different unit labor cost indexes (labor is about 80 percent of the combined labor and overhead input) is not available for the subindustries. The identical labor and overhead indexes are combined into a composite index using weights from the I-O table, and this composite index, in turn, is combined with materials indexes at the subindustry level. The latter combination is done at the subindustry level so that different age compositions can be taken into account in the estimation of inventory cost indexes (described in step three).

The combination of labor and overhead  $C_s$  indexes and materials  $C_s$  indexes with weights based on the I-O table yields indexes applicable to finished goods inventories. For work-in-process inventories, it is assumed that materials are brought in relatively early in the production process and labor and

overhead are added evenly. This assumption is made to reflect the fact that materials make up a higher proportion of work-in-process inventories than of finished goods inventories.

For each stage of fabrication, non-LIFO inventory weights derived from the *ASM* at the 4-digit industry level are used to combine subindustry  $C_s$  indexes to major group levels. These major group indexes are used in the deflation of changes in LIFO book values, which is described in step four.

#### *Step Three: Construction of inventory cost indexes*

In order to construct inventory cost indexes ( $C$ ) to deflate non-LIFO book values, information on the age composition of the book value is required to weight over time the  $C_s$  subindustry materials, labor, and overhead indexes. To estimate the age composition, ages of goods held in inventory are first measured by the ratio of inventories to cost of goods sold. The latter is value of shipments less profits and nonproduction costs, and is estimated by adjusting shipments data from the *ASM* by ratios of the cost of goods sold to shipments, derived from the I-O table. The ratios of inventories to cost of goods sold are adjusted to eliminate the impact on book values that is due to the use of different inventory valuation methods. A separate age composition is developed for inventories valued by each of four groups of the principal non-LIFO methods: (a) first-in, first-out (FIFO) and actual cost; (b) average cost; (c) market and replacement cost; and (d) standard cost. For the first two groups, the age composition depends on the ratio of inventories to cost of goods sold, but not for the last two. For example, BEA assumes that the use of the FIFO method results in an average age the

same as that indicated by the ratio; the market cost method results in the valuation of inventories at end-of-period prices, so that the age composition does not depend on the ratio. The age compositions are then weighted together to construct a  $C$  index for each subindustry. The weights are current-period valuation methods percentages from the *ASM*.

Non-LIFO inventory weights from the *ASM* are used to combine the subindustry  $C$  indexes to obtain the major group indexes by stage of fabrication.

#### *Step Four: Deflation of non-LIFO and LIFO book values*

For non-LIFO inventories, constant-dollar estimates are derived by deflating book values by  $C$  indexes at the major group level by stage of fabrication. For LIFO inventories, current-period changes in book values are deflated by the  $C_s$  indexes.<sup>2</sup> The deflated changes are then cumulated from the constant-dollar base-stock estimate to obtain the constant-dollar inventory stock. The base-stock estimate is the December 1939 LIFO book value deflated by the  $C$  index for that month. The year 1939 is used because the LIFO method was first permitted for general use by the Internal Revenue Service in that year.

Estimates of total constant-dollar inventories at the major group level by stage of fabrication are the sum of the non-LIFO-based and LIFO-based estimates.

2. When there is a year-over-year decrease in LIFO book values, this procedure is modified, because such a decrease represents a decrease in physical volume valued in prior-period prices. To estimate the change in current-period prices, the decrease is converted by a ratio of current-period prices to the prices of the period(s) in which the withdrawn goods were acquired. The current-period change is then deflated in the same manner as inventory additions.